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EXAMINER	
PEREZ, ANGELICA	

ART UNIT	PAPER NUMBER
2618	

DATE MAILED: 10/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/053,232	ROBERTS ET AL.	
	Examiner	Art Unit	
	Perez M. Angelica	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims 1-75

4)☒ Claim(s) *1-43 and 64-69* is/are pending in the application.

4a) Of the above claim(s) *44-63 and 70-75* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-43 and 64-69* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/15/02; 1/13/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 7-11, 13-14 and 64 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 7 and 14, the applicant refers to a "lost processor" and a "lost circuit", respectively. The examiner is not sure as to what the applicant means. Is it a detached "circuit", "processor" that has been lost?

Regarding claims 8-11 and 13, the applicant refers to "lost signals" and "lost preamble". E.g., it is not clear, to the examiner, how a signal that has been lost can contain "a sixth portion containing a level of the battery" (claim 13); how a signal that has been lost can help a lost transmitter to derive its orientation (claim 11).

3. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely

exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 64 recites the broad recitation "three digital portions", found in claim 64, lines 4-5, and the claim also recites, "of the at least two digital portions", line 5, which is the narrower statement of the range/limitation.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3 and 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Bonner (Bonner et al.; US Patent No.: 3,774,217).

Regarding claim 1, Bonner teaches of a system for communicating encoded signals to control a device for performing work related to yarding operations (column 1, lines 5-10 and figures 1-3), comprising: a transmitter for transmitting an encoded signal having at least two digital portions (column 5, lines 38-39 figure 5, item 100), a first portion of the at least two digital portions being defined as a preamble (figure 10, where the sync and address are part of the preamble), a second portion of the at least two digital portions being defined as an action code (figure 10, where data word 1-5 correspond to e.g., commands, data, messages, controls, "action codes", etc.); and a

receiver for receiving the encoded signal to produce a controlling signal (column 7, lines 22-28 and figure 6, item 110), the receiver being activated to process the action code to produce the controlling signal, thereby controlling the device for performing work related to yarding operations (column 8, lines 3-17), when the preamble is of a predetermined pattern (figure 10, where the preamble can be arranged to contain predetermined address, flags, controls, etc.).

Regarding claim 2, Bonner teaches all the limitations of claim 1. Bonner further teaches where the transmitter includes a first piece of static memory for storing a source node identifier and a destination node identifier (column 7,line 17-21 and figure 10, "address word" where the parameter contains the source and destination addresses), the transmitter transmitting the encoded signal having a third portion being defined as a network identifier (figure 10, "address word" where the source and destination addresses can be the network addresses), the network identifier containing the source node identifier and the destination node identifier (figure 10, "address word" where the parameter contains the source and destination addresses), the receiver including a second piece of static memory for storing a predetermined destination node identifier and being programmed to recognize a set of source node identifiers (column 6, lines 55-59), the receiver being activated to discard the encoded signal when either the source node identifier is not a member of the set of source node identifiers or the destination node identifier is different from the predetermined destination node identifier (column 6, lines 54-64, where if the addresses do not match, the encoded signals do not go through; thus, "discarded"), thereby inhibiting unauthorized signals from controlling the

device for performing work related to yarding operations (column 6, lines 54-64, where if the addresses do not match, the command is null).

Regarding claim 3, Bonner teaches all the limitations of claim 2. Bonner further teaches where the transmitter includes a single-axis tilt detector for producing a first quantity that is indicative of the position of the transmitter along a horizontal plane and a second quantity that is indicative of the position of the transmitter along a vertical plane, the first quantity and the second quantity defining an orientation of the transmitter (column 5, lines 56-63, where the bidirectional control can be horizontal and vertical).

Regarding claim 17, Bonner teaches all the limitations of claim 2. Bonner further teaches where the receiver includes a recorder that records the encoded signal based upon the network identifier, thereby aiding in the determination of the sequence of yarding activities that lead to an accident relating to yarding operations (abstract).

Regarding claim 18, Bonner teaches all the limitations of claim 3. Bonner further teaches where the transmitter includes a microphone for receiving voice communication and transmitting the voice communication to the receiver, the voice communication being modulated via frequency modulation and being framed with a digital squelch code so as to inhibit false reception prior to transmitting the voice communication to the receiver (column 6, lines 49-64, column 8, lines 3-22, column 4, lines 17-24; where the operation controlled by the operator can be done using voice commands).

Regarding claim 19, Bonner teaches all the limitations of claim 18. Bonner further teaches where the voice communication is transmitted and the transmission of the encoded signal is inhibited when the transmitter is in a first orientation, and where the

encoded signal is transmitted and the transmission of the voice communication is inhibited when the transmitter is in a second orientation (column 4, lines 17-24 and 41-55; where the operation controlled by the operator can be done using voice commands and where a first or second position can be).

Regarding claim 20, Bonner teaches all the limitations of claim 18. Bonner further teaches where the transmitter includes an interface for receiving external power to charge the battery (column 7, lines 39-47), the interface being adapted to receive programming signals to program the transmitter when external power is not presented at the interface to charge the battery (column 8, lines 19-26).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bonner in view of Zeewy (Zeewy, Abraham; US Patent No.: 4,973,966).

Regarding claim 4, Bonner teaches all the limitations of claim 3.

Bonner does not specifically teach where the transmitter includes a counter for counting a span of time in which the orientation of the transmitter does not change within a predetermined period of time, thereby defining a duration that the transmitter has laid motionless.

In related art concerning an apparatus for determining the speed of motion of slowly moving objects, Zeewy teaches where the transmitter includes a counter for counting a span of time in which the orientation of the transmitter does not change within a predetermined period of time, thereby defining a duration that the transmitter has laid motionless (column 1, lines 39-59).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Bonner's system with Zeewy's timing of motion and motionless objects in order to obtain more accurate speed measurements, as taught by Zeewy.

8. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonner in view of Zeewy further in view of Crabtree (Crabtree et al.; US Patent No.: 6,788,199 B2)

Regarding claim 5, Bonner in view of Zeewy teaches all the limitations of claim 4.

Bonner in view of Zeewy does not specifically teach where the transmitter includes a third piece of static memory for storing a device identifier, the device identifier being a serial number that is unique to the transmitter.

In related art concerning an article locator system, Crabtree teaches where the transmitter includes a third piece of static memory for storing a device identifier, the device identifier being a serial number that is unique to the transmitter (column 15, lines 37-60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Bonner in view of Zeewy system with Crabtree's serial number in order to locate specific objects, as taught by Crabtree.

Regarding claim 6, Bonner in view of Zeewy further in view of Crabtree teaches all the limitations of claim 5. Bonner further teaches where the transmitter includes a battery having a level of energy, the battery for supplying power to operate the transmitter (column 3, lines 17-18, where the antenna is included in the circuitry).

9. Claims 7-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonner in view of Zeewy, in view of Crabtree and further in view of Priestley (Priestley et al.; US Patent No.: 6,405,114 B1).

Regarding claim 7, Bonner in view of Zeewy and further in view of Crabtree teaches all the limitations of claim 6.

Bonner in view of Zeewy further in view of Crabtree does not specifically teach where the transmitter includes a lost processor for running a piece of software that transmits a lost encoded signal being composed of multiple digital portions that can be decoded by a transceiver to find the transmitter if the transmitter is lost during yarding operations.

In related art concerning an aerial work platform boom having ground and platform controls linked by a controller area network, Priestley teaches where the transmitter includes a lost processor for running a piece of software that transmits a lost encoded signal being composed of multiple digital portions that can be decoded by a

transceiver to find the transmitter if the transmitter is lost during yarding operations (column 7, lines 24-51, figure 2B, item 206).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Bonner in view of Zeewy and further in view of Crabtree system with Priestley's processor in order to implement the software that executes the routines, as taught by Priestley.

Regarding claim 8, Bonner in view of Zeewy and further in view of Crabtree and Priestley teaches all the limitations of claim 7. Bonner further teaches where the lost encoded signal includes a first portion being defined as a lost preamble, the transceiver being adapted to discard the lost encoded signal when the lost preamble is different from a predetermined lost preamble (column 6, line lines 51-64).

Regarding claim 9, Bonner in view of Zeewy and further in view of Crabtree and Priestley teaches all the limitations of claim 8. Bonner further teaches where the lost encoded signal includes a second portion being defined as a lost network identifier, the lost network identifier having the source node identifier and the destination node identifier, the transceiver being activated to discard the lost encoded signal when either the source node identifier is not a member of the set of source node identifiers or the destination node identifier is different from the predetermined destination node identifier, thereby inhibiting undesired signals from confusing the receiver in finding the transmitter that is lost (column 6, lines 51-64).

Regarding claim 10, Bonner in view of Zeewy and further in view of Crabtree and Priestley teaches all the limitations of claim 9. Bonner further teaches where the lost

encoded signal includes a third portion that contains the device identifier, thereby allotting the transceiver to recognize the transmitter that is lost (column 6, lines 51-64).

Regarding claim 11, Bonner in view of Zeewy and further in view of Crabtree and Priestley teaches all the limitations of claim 10. Bonner further teaches where the lost encoded signal includes a fourth portion containing the first quantity that is indicative of the position of the transmitter along the horizontal plane and a seventh portion containing the second quantity that is indicative of the position of the transmitter along a vertical plane, thereby allowing the transceiver to derive the orientation of the transmitter lying on the ground if the transmitter is lost (column 5, lines 56-63, where the bidirectional control can be horizontal and vertical).

Regarding claim 12, Bonner in view of Zeewy and further in view of Crabtree and Priestley teaches all the limitations of claim 11. Zeewy further teaches where the lost encoded signal includes a fifth portion containing the duration that the transmitter has laid motionless (column 1, lines 39-59).

Regarding claim 13, Bonner in view of Zeewy and further in view of Crabtree and Priestley teaches all the limitations of claim 12. Bonner further teaches where the lost encoded signal includes a sixth portion containing the level of the battery of the transmitter, the battery level being indicative of the remaining level of energy of the battery of the transmitter, thereby allowing the transceiver to calculate the remaining time the transmitter may operate (column 3, lines 17-18, where the antenna is included in the circuitry).

Regarding claim 14, Bonner, Seedy, Crabtree and Priestley teach all the limitations of claim 13. Crabtree further teaches where the lost circuit of the transmitter is adapted to receive commands from the transceiver so as to aid the transceiver finding the transmitter if the transmitter is lost during yarding operations (column 3, lines 25-31).

Regarding claim 15, Bonner, Seedy and Crabtree teach all the limitations of claim 14. Crabtree further teaches where the transmitter includes an aural indicator that audibly provides information regarding a state of the transmitter so as to help confirm for a user that the transmitter has desirably responded to an action of the user or to help the user to locate the transmitter if the transmitter is lost (column 2, lines 38-50).

10. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bonner, Seedy and Crabtree and further in view of Joao, (Joao, Raymond Anthony; US 2005/0,248,444 A1).

Regarding claim 16, Bonner, Seedy and Crabtree teach all the limitations of claim 15.

Bonner, Seedy and Crabtree do not specifically teach where the transmitter includes a scrambler that scrambles a portion of the encoded signal to improve the distribution of bits in the encoded signal, thereby enhancing the ability of the receiver to receive the encoded signal.

In related art concerning a control, monitoring and/or security apparatus and method, Joao teaches where a transmitter includes a scrambler that scrambles a portion of the encoded signal to improve the distribution of bits in the encoded signal,

thereby enhancing the ability of the receiver to receive the encoded signal (paragraph 629).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Bonner, Seedy and Crabtree system with Joao's scrambler in order to add security to the system, as taught by Joao.

11. Claim 21-30 and 64-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonner in view of Priestley.

Regarding claim 21, Bonner teaches of a method for communicating encoded signals transmitted by a transmitter and received by a receiver to control a device for performing work related to yarding operations (column 1, lines 5-10 and figures 1-3), comprising: a receiver that contains at least two digital portions (column 7, lines 22-28 and figure 6, item 110), a first portion of the at least two digital portions being defined as a preamble (figure 10, where the sync and address are part of the preamble), a second portion of the at least two digital portions being defined as an action code (figure 10, where data word 1-5 correspond to e.g., commands, data, messages, controls, "action codes", etc.); and processing the action code by the receiver upon receiving the at least two digital portions to produce a controlling signal(column 8, lines 3-17), thereby controlling the device for performing work related to yarding operations, when the preamble is of a predetermined pattern (figure 10, where the preamble can be arranged to contain predetermined address, flags, controls, etc.).

Bonner does not specifically teach of sleeping to conserve energy stored in a battery until the transmitter is awakened by a switch activation for transmitting an encoded signal to the receiver.

Priestley teaches of sleeping to conserve energy stored in a battery until the transmitter is awakened by a switch activation for transmitting an encoded signal to the receiver (columns 3 and 7, lines 14-23 and 32-36).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Bonner's system with Priestley's deactivation of the boom control in order to save power, as taught by Priestley. .

Regarding claim 22, Bonner and Priestley teach all the limitations of claim 21. Bonner further teaches where the act of transmitting includes transmitting a third portion being defined as a network identifier, the network identifier containing a source node identifier and a destination node identifier (column 6, lines 51-64 and column 10, lines 46-51), the receiver being programmed to recognize a predetermined destination node identifier and a set of source node identifiers (column 6, lines 51-64 and column 10, lines 46-5), the act of receiving including discarding the encoded signal when either the source node identifier is not a member of the set of source node identifiers or the destination node identifier is different from the predetermined destination node identifier (column 10, lines 46-51; where if the receiver is not the corresponding one, the signal is discarded), thereby inhibiting unauthorized signals from controlling the device for performing work related to yarding operations (column 6, lines 51-65).

Regarding claim 23, Bonner and Priestley teach all the limitations of claim 21. Bonner further teaches where sleeping to conserve energy stored in the battery until the transmitter is awakened by a scheduled task to check a state of a programming interface of the transmitter is defined as an active state (column 54-67 and column 8, lines 1-2), the transmitter changing from the active state to a program state when a programming signal is sensed by the transmitter on a programming pin of the transmitter (column 8, lines 3-25), the transmitter being receptive to programming instructions when the transmitter is in the program state (column 8, lines 18-25).

Regarding claim 24, Bonner and Priestley teach all the limitations of claim 21. Bonner further teaches where sleeping to conserve energy stored in the battery until the transmitter is awakened by a scheduled task to check the level of the battery (column 7, lines 47-67), the transmitter outputting an audible signal when the level of the battery has been reduced to a predetermined low threshold value (column 7, lines 47-67 and column 8, lines 1-2).

Regarding claim 25, Bonner and Priestley teach all the limitations of claim 21. Priestley further teaches where sleeping to conserve energy stored in the battery until the transmitter is awakened to perform a scheduled task is defined as an active state, the scheduled task including checking an orientation of the transmitter (column 7, lines 36-40). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Bonner's method with Priestley's states and orientation in order to warn the user of the current condition of the device.

Regarding claim 26, Bonner in view of Priestley teaches all the limitations of claim 25. Priestley further teaches where the transmitter changes from the active state to a storage state when the act of checking the orientation of the transmitter determines that the transmitter is oriented vertically and that the transmitter is motionless, thereby indicating that the transmitter is fitted into a charging unit to charge the battery (column 7, lines 36-39; where the state indicates the "absence of any boom or drive motion").

Regarding claim 27, Bonner in view of Priestley teaches all the limitations of claim 26. Priestley further teaches where the transmitter changes from the active state to a dropped state when the act of checking the orientation of the transmitter determines that the transmitter is not oriented vertically and that the transmitter is motionless, thereby indicating that the transmitter has been inadvertently dropped on the ground (columns 10, 11, 12, lines 47-56, 41-43 and 4-19, respectively).

Regarding claim 28, Bonner in view of Priestley teaches all the limitations of claim 27. Priestley further teaches where the transmitter changes from the dropped state to an alert state after a duration of time has expired, the transmitter outputting an alert signal, the alert signal being selected from a group consisting of aural alert signals, radio frequency alert signals, and voice alert signals, the aural alert signals being adapted to be audible (column 7, lines 32-51 where the examiner selected "radio frequency alert signals" form the choices provided by the applicant), the radio frequency alert signals being a package of multiple digital portions (where radio signals are digitized, packetized), and the voice alert signals being voice communication picked up

by an enabled microphone of the transmitter for transmission to a transceiver, thereby aiding to locate the transmitter when the transmitter is lost (column 2, lines 38-50).

Regarding claim 29, Bonner in view of Priestley teaches all the limitations of claim 25. Bonner further teaches where the transmitter transmits voice communication to the receiver when a switch is actuated on the transmitter, the transmitter is oriented vertically, and the transmitter is in the active state (columns 4, 5,6, 7 and 8; lines 17-24, 38-39, 49-64, 22-28 and 3-22; where the switches provide the analog signals, voice signals).

Regarding claim 30, Bonner in view of Priestley teaches all the limitations of claim 29. Bonner further teaches where the transmitter ceases the transmission of voice communication to the receiver after a period of time, voice communication being reestablished by the transmitter when the switch is actuated again on the transmitter, the transmitter is oriented vertically, and the transmitter is still in the active state (columns 4, 5,6, 7 and 8; lines 17-24, 38-39, 49-64, 22-28 and 3-22; where in the absence of data, the system becomes idle).

Regarding claim 64, Bonner teaches of a method for communicating lost encoded signals transmitted by a transmitter and received by a transceiver to find the transmitter that transmits information related to yarding operations (column 1, lines 5-10 and figures 1-3), comprising: transmitting by the transmitter a lost encoded signal that contains at least three digital portions, a first portion of the at least two digital portions being defined as a preamble (figure 10, where the sync and address are part of the preamble), a second portion being defined as a network identifier (figure 10, "address

word" where the source and destination addresses can be the network addresses), and a third portion being defined as a device identifier (column 6, lines 51-64); and processing the network identifier by the transceiver upon receiving the at least three digital portions to locate the lost transmitter when the preamble is of a predetermined pattern (figure 10, where the preamble can be arranged to contain predetermined address, flags, controls, etc.).

Bonner does not specifically teach of processing the device identifier to identify the lost transmitter when the transceiver recognizes the network identifier.

Priestley teaches of processing the device identifier to identify the lost transmitter when the transceiver recognizes the network identifier (column 7, lines 24-51, figure 2B, item 206).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Bonner's system with Priestley's processor in order to locate the desired object, apparatus, as taught by Priestley.

Regarding claim 65, Bonner in view of Priestley teaches all the limitations of claim 64. Bonner further teaches of the network identifier having a source node identifier and a transceiver node identifier (column 7,line 17-21 and figure 10, "address word" where the parameter contains the source and destination, transceiver, addresses), the transceiver being programmed to recognize a set of source node identifiers (column 6, lines 55-59), the act of receiving including discarding the encoded signal when either the source node identifier is not a member of the set of source node identifiers or the destination node identifier is different from the predetermined destination node identifier

(column 6, lines 54-64, where if the addresses do not match, the encoded signals do not go through; thus, "discarded"), thereby inhibiting unauthorized signals from controlling the device for performing work related to yarding operations (column 6, lines 54-64, where if the addresses do not match, the command is null).

Regarding claim 66, Bonner in view of Priestley teaches all the limitations of claim 65. Bonner further teaches where the lost encoded signal includes a fourth portion that contains a sync, thereby allowing the transceiver to recognize a transition from the preamble to the rest of the lost encoded signal (figure 10, item "SYNC WORD" of the message).

Regarding claim 67, Bonner in view of Priestley teaches all the limitations of claim 66. Bonner further teaches where the lost encoded signal includes a fifth portion containing the first quantity that is indicative of the position of the transmitter along the horizontal plane and a sixth portion containing the second quantity that is indicative of the position of the transmitter along a vertical plane, thereby allowing the transceiver to derive the orientation of the transmitter (column 5, lines 56-63, where the bidirectional control can be horizontal and vertical).

12. Claims 31 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonner in view of Crabtree.

Regarding claims 31 and 41, Bonner teaches of a transmitter for transmitting encoded signals to a receiver to control an aural signaling device for forewarning of impending changes in operations of yarding machinery, the transmitter comprising (column 1, lines 5-10; column 5, lines 38-39 and figures 1-3; figure 5, item 100): a first

component for responding to a switch actuation to output an encoded signal having at least three digital portions, a first portion being defined as a preamble (figure 10, where the sync and address are part of the preamble), a second portion being defined as a network identifier (figure 10, "address word" where the source and destination addresses can be the network addresses), and a third portion being defined as an action code (figure 10, where data word 1-5 correspond to e.g., commands, data, messages, controls, "action codes", etc.), the network identifier being processed by the receiver when the preamble is of a predetermined pattern (figure 10, where the preamble can be arranged to contain predetermined address, flags, controls, etc.), the action code being processed by the receiver to control the aural signaling device when the network identifier is recognized by the receiver (column 7, lines 22-28 and figure 6, item 110), thereby inhibiting signals with unrecognized network identifiers from controlling the aural signaling device and the motorized carriage (column 6, lines 54-64, where if the addresses do not match, the command is null. In addition, when the aural signal device is controlled, subsequently, the motorized carriage is indirectly controlled through the aural device); and an antenna for radiating the encoded signal so that the receiver may receive the encoded signal to control the aural signaling device (figure 4, item 100; see antenna).

Bonner in view of does not necessarily teach of the aural signal and a frequency synthesizer for producing the encoded signal at a radio frequency for transmission by varying the frequency of the encoded signal.

Crabtree teaches of the aural signal and a frequency synthesizer for producing the encoded signal at a radio frequency for transmission by varying the frequency of the encoded signal (column 2, lines 49; where the tone requires synthesizing in order to do frequency conversions).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Bonner's system with Crabtree's aural signals and synthesizer in order to provide an audible warning that utilizes a synthesizer in the processing of the signal, as taught by Crabtree.

13. Claims 32-40 and 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonner in view of Crabtree and further in view of Krebs (Krebs et al.; US Patent No.: 4,519,068).

Regarding claim 32, Bonner in view of Crabtree teaches all the limitations of claim 31.

Bonner in view of Crabtree does not necessarily teach where the frequency synthesizer includes a reference crystal oscillator for generating a reference frequency, the crystal oscillator being receptive to the data signal for modulating the reference frequency so as to produce a modulated encoded signal.

In related art concerning a method and apparatus for communicating variable length messages between a primary station and remote stations of a data communication system, Krebs teaches of a crystal oscillator for generating a reference frequency, the crystal oscillator being receptive to the data signal for modulating the reference frequency so as to produce a modulated encoded signal (figure 10, item 306).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Bonner's system with Krebs oscillator in order to determine the "radio channel to which the delivery receiver is tuned", as taught by Krebs.

Regarding claim 33, Bonner in view of Crabtree teaches all the limitations of claim 32. Krebs further teaches where the frequency synthesizer includes a voltage-controlled oscillator for oscillating the encoded signal to produce an oscillated encoded signal for the antenna to radiate, the voltage-controlled oscillator being receptive to a filtered voltage signal for adjusting the frequency by which the voltage-controlled oscillator oscillates the encoded signal (column 9, lines 6-40; where the oscillators are controlled by the strength of the signals, voltage).

Regarding claim 34 Bonner in view of Crabtree teaches all the limitations of claim 33. Krebs further teaches where the frequency synthesizer includes a second component for multiplying the reference frequency with the oscillated encoded signal so as to produce the voltage signal having a magnitude and sign that are proportional to the phase difference between the reference frequency and the oscillated encoded signal, the second component being receptive to a phase-locked loop programming signal to change the frequency of the oscillated encoded signal by a sub-multiple of the reference frequency, thereby shifting from one channel to another channel for communication (column 10, line 43-45; where when processing the signal, the magnitude and sign that are proportional to the phase difference are calculated and compared to the reference signal).

Regarding claim 35, Bonner in view of Crabtree teaches all the limitations of claim 34. Krebs further teaches where the frequency synthesizer includes a loop filter to low-pass filter the voltage signal to produce the filtered voltage signal being used by the voltage-controlled oscillator to adjust the frequency by which the voltage-controlled oscillator oscillates the encoded signal (figure 10, where the filter can be LPF or HPF in order to select/reject desired frequencies).

Regarding claim 36, Bonner in view of Crabtree teaches all the limitations of claim 35. Krebs further teaches of comprising a radio-frequency power amplifier for amplifying the oscillated encoded signal coming from the frequency synthesizer to produce an amplified encoded signal when a transmitter power control signal turns on the radio-frequency power amplifier, thereby inhibiting undesired transmissions (figure 10, item 330).

Regarding claim 37, Bonner in view of Crabtree teaches all the limitations of claim 36. Krebs further teaches of comprising a harmonic cleansing filter for low-pass filtering the amplified encoded signal to produce a cleansed encoded signal, thereby attenuating the harmonics associated with the amplified encoded signal (figure 10, where the filter can be LPF or HPF in order to select/reject desired frequencies).

Regarding claim 38, Bonner in view of Crabtree teaches all the limitations of claim 37. Crabtree further teaches where the frequency synthesizer is receptive to a transmitter standby control signal, the frequency synthesizer being deactivated when the transmitter standby control signal is at a first predetermined level and being activated when the transmitter standby control signal is at a second predetermined

level, thereby conserving the energy of a battery of the transmitter (column 10, lines 40-57; where the synthesizer is deactivated during sleep mode).

Regarding claims 39 and 42, Bonner in view of Crabtree teaches all the limitations of claims 38 and 41, respectively. Bonner further teaches of comprising a finder receiver for receiving a finder signal from the antenna at a predetermined frequency so that the transmitter may respond to the finder signal and perform a task to aid in it being found when the transmitter is lost (figure 4, item 118).

Regarding claims 40 and 43, Bonner in view of Crabtree teaches all the limitations of claims 39 and 42, respectively. Bonner further teaches of comprising a high-pass filter coupled between the antenna and the receiver, the high-pass filter being adapted to pass the finder signal to the finder receiver while inhibiting the cleansed encoded signal from entering the finder receiver (figure 10, where the filter can be LPF or HPF in order to select/reject desired frequencies).

14. Claims 68-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonner in view of Priestley and further in view of Zeewy.

Regarding claim 68, Bonner and Priestley teach all the limitations of claim 67.

Bonner and Priestley do not specifically teach where the lost encoded signal includes a seventh portion containing duration of time that the transmitter has lain motionless.

Zeewy teaches where the lost encoded signal includes a seventh portion containing a duration of time that the transmitter has laid motionless (column 1, lines 39-59).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Bonner and Priestley system with Zeewy's timing of motion and motionless in order to obtain more accurate speed measurements, as taught by Zeewy.

Regarding claim 69, Bonner in view of Priestley and further in view of Zeewy teaches all the limitations of claim 68. Bonner further teaches where the lost encoded signal includes an eighth portion containing a level of a battery of the transmitter, the battery level being indicative of the remaining level of energy of the battery of the transmitter (column 3, lines 17-18, where the antenna is included in the circuitry), thereby allowing the transceiver to calculate the remaining time the transmitter may operate (column 3, lines 17-18).

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angelica Perez whose telephone number is 571-272-7885. The examiner can normally be reached on 6:00 a.m. - 2:00 p.m., Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571) 272-7882. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300 for regular communications and for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either the PAIR or Public PAIR. Status information for unpublished applications is available through the Private PAIR only. For more information about the pair system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). Information regarding Patent Application Information Retrieval (PAIR) system can be found at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600's customer service number is 703-306-0377.

10-01-06

LANA LE
PRIMARY EXAMINER

Angelica Perez
Examiner

Art Unit 2618

August 4, 2006